

02/05/14 Agenda

- Warm up exercise
- Quiz Corrections:
 - Quiz 5.4-5.5 corrections must be done by Thursday (2/6)
- Review Homework
 - Worksheet 6.3 day 1 - Solve by Elimination
- Section 6.3 day 2 - Solve by Elimination

Homework - Worksheet 6.3 day 2 - Solve by Elimination

Warm Up - Homework out!

Solve for x:

$$(x - 1 = 4) \cdot 5$$

$$x = 5$$

$$5x - 5 = 20$$

$$x = 5$$

$$2x - 2 = 8$$

$$x = 5$$

$$5x - 5 = 20$$

$$6x - 6 = 24$$

6.3 - Solve SoE by Elimination

Target 6B

February 5, 2014

Remember:

- * Look for a variable with the same coefficient.
- * Same sign, subtract; different sign, add.

Today:

We're going to be working with equations that don't have variables with the same coefficient.

- * You choose which variable to eliminate.
- * You will need to multiply one or both equations to get the same coefficient.
- * Then, repeat the steps from yesterday to solve.

Examples:

Solve the following systems by elimination:

1. $\begin{cases} x - 3y = -3 \\ -2x + 7y = 10 \end{cases}$

$\times 2$
 $\frac{2}{1,2}$

$(9, 4)$

$\begin{aligned} & (x - 3y = -3) \cdot 2 \quad \Rightarrow \quad 2x - 6y = -6 \\ & -2x + 7y = 10 \\ & \hline & 1y = 4 \\ & y = 4 \end{aligned}$

$\begin{aligned} & x - 3(4) = -3 \\ & x - 12 = -3 \\ & \quad +12 \quad +12 \\ & \hline & x = 9 \end{aligned}$

2. $\begin{cases} 2x + y = 23 \\ 3x + 2y = 37 \end{cases}$

$\times 2$
 $\frac{2}{1,2}$

$(9, 5)$

$\begin{aligned} & (2x + y = 23) \cdot 2 \quad \Rightarrow \quad 4x + 2y = 46 \\ & 3x + 2y = 37 \\ & \quad - (3x + 2y = 37) \\ & \hline & x = 9 \end{aligned}$

$\begin{aligned} & 3(9) + 2y = 37 \\ & 27 + 2y = 37 \\ & \quad -27 \quad -27 \\ & \hline & 2y = 10 \\ & \quad \div 2 \quad \div 2 \\ & \hline & y = 5 \end{aligned}$

Examples:

Solve the following systems by elimination:

$$\begin{array}{r} x \quad 6x \\ \underline{2,3} \end{array}$$

$$3. \begin{cases} -2x - 6y = 0 \\ 3x + 11y = 4 \end{cases} \begin{array}{l} \cdot 3 \\ \cdot 2 \end{array} \begin{array}{l} -6x - 18y = 0 \\ 6x + 22y = 8 \end{array}$$

$$\begin{array}{r} (-6, 2) \quad -2x - 6y = 0 \\ \quad \quad -2x - 6(2) = 0 \\ \quad \quad -2x - 12 = 0 \\ \quad \quad \quad +12 \quad +12 \\ \quad \quad \quad \hline \quad \quad -2x = 12 \\ \quad \quad \quad \underline{-2} \quad \underline{-2} \\ \quad \quad \quad x = -6 \end{array} \quad \begin{array}{r} 4y = 8 \\ \underline{4} \quad \underline{4} \\ y = 2 \end{array}$$

$$\begin{array}{r} y \quad 66y \\ \underline{11,6} \end{array}$$

$$4. \begin{cases} 3x + 11y = 4 \\ -2x - 6y = 0 \end{cases} \begin{array}{l} \cdot 6 \\ \cdot 11 \end{array} \begin{array}{l} 18x + 66y = 24 \\ -22x - 66y = 0 \end{array}$$

$$\begin{array}{r} -4x = 24 \\ \underline{-4} \quad \underline{-4} \\ x = -6 \end{array}$$

$$\begin{array}{r} x \quad 12x \\ \underline{4,3} \end{array}$$

$$5. \begin{cases} 4x + 3y = 8 \\ 3x - 5y = -23 \end{cases} \begin{array}{l} \cdot 3 \\ \cdot 4 \end{array} \begin{array}{l} 12x + 9y = 24 \\ 12x - 20y = -92 \end{array}$$

$$\begin{array}{r} (-1, 4) \quad 4x + 3y = 8 \\ \quad \quad 4x + 3(4) = 8 \\ \quad \quad 4x + 12 = 8 \\ \quad \quad \quad -12 \quad -12 \\ \quad \quad \quad \hline \quad \quad 4x = -4 \\ \quad \quad \quad \underline{4} \quad \underline{4} \\ \quad \quad \quad x = -1 \end{array} \quad \begin{array}{r} 29y = 116 \\ \underline{29} \quad \underline{29} \\ y = 4 \end{array}$$